

setting a workpiece using either of a printing cylinder or a printing sleeve, which is integrally supported by a metallic mandrel, to a holding and rotating device for holding and rotating the workpiece;

supplying a liquid-state photosensitive resin having a viscosity that retains an applied shape without being influenced by gravity or centrifugal force due to rotation, to a resin receiving plate which has an angle of inclination and whose front end has a doctor blade shape from a resin supplying device in a linear mode by linearly moving the resin supplying device in an axial direction of the workpiece, at least one end of the resin receiving plate in the axial direction having a resin flow preventive movable dam that is linearly movable in the axial direction of the workpiece;

applying the liquid-state photosensitive resin supplied to the resin receiving plate to an outer periphery of the workpiece at an applied thickness with the front-end of the resin receiving plate while rotating the workpiece; and

exposing high-intensity ultraviolet light to the liquid-state photosensitive resin applied to the outer periphery of the workpiece while rotating the workpiece to form a photosensitive resin cured layer by optically curing the liquid-state photosensitive resin so that it can be carved by an infrared laser beam.

All of claims 3-15 and 27-31 depend from claim 1.

An important feature of Applicants' invention is first the step of supplying the described liquid-state photosensitive resin to an inclined resin receiving plate having a doctor blade shape in a linear mode in an axial direction of the workpiece where a resin flow preventive movable dam is located at at least one end of the inclined resin receiving plate, which dam is linearly moveable in the axial direction of the rotating workpiece. Then in a separate step applying the resin from the resin receiving plate to

the rotating workpiece. In other words, the resin is first supplied linearly to the receiving plate and then to the workpiece.

Watanabe does not disclose the linear application of the photo-sensitive resin to a resin receiving plate in an axial direction of the rotating workpiece as claimed. This reference belongs to the same assignee as the present application, so the Applicants are fully aware of the teachings of this reference.

Rather in Watanabe, the liquid-state photosensitive resin is applied to the rotating workpiece directly and all at once from a "bucket" III. More specifically, as described in paragraph [0026] of the English translation of Watanabe, a liquid-state photo-resistive resin applying mechanism 110, is arranged above a cylinder 100 having a bucket 111 for holding a liquid-state photo-resistive resin 10. An end of a fixed vertical plate 112 which is a part of bucket 111 is used as a doctor blade to apply the resin to the cylinder. A plate 113 opposite to fixed plate 112 can rotate in a counterclockwise direction (FIG. 2), to open the bottom of the bucket 111, and in a clockwise direction, to close the bottom of the bucket 111. The degree to which the bucket is opened or closed by plate 113 controls the thickness of the coating applied. In other words, Watanabe supplies and applies the liquid resin simultaneously. Or Watanabe at least supplies and applies the liquid resin to the workpiece and then to the plate 112 because of the direction of rotation of the workpiece as shown in FIG. 2.

Moreover, the liquid resin is not supplied and applied in a linear mode in an axial direction of the rotating workpiece as claimed because as shown in FIG. 1 of Watanabe the opening of applying mechanism 110 is as wide as workpiece 100.

In contrast, in the present invention the liquid-state photosensitive resin 10 is first supplied linearly to the receiving plate resin 151 having the resin flow preventing

dam 153, and is then applied linearly to the rotating workpiece 70. This has the advantage of minimizing the production of bubbles in the applied resin. Watanabe does not disclose or suggest such a process, and, in fact, suffers from such a disadvantage. See the discussion of Watanabe as patent document 7 on page 10, lines 15-18 of the specification.

Moreover, as described on page 14, lines 22-23 and on page 54, lines 12-19 of the specification, the linearly moveable dam permits the width of the resin applied to the workpiece to be readily varied. This is graphically shown in the attached Exhibit A. As acknowledged by the Examiner on page 4, lines 1-3 of the Office Action, this is not disclosed in or is it possible in Watanabe, because the width of the applied resin is fixed by the opening of the bottom of bucket 111. See page 10, lines 18-20 of the specification and the discussion of patent document 7.

However, the Examiner appears to believe this modification of Watanabe would be obvious in view of Kaname. Kaname discloses a plate body 18 with side surface plates 19. According to Applicants, while Kaname describes the plate body 18 on page 2, lower-left column, line 16 - lower-right column, line 5, it does not describe or suggest that the side surface plates 19 are movable. Rather, the side surface plates 19 are fixed plates. Moreover, as described at page 3, upper-right column, lines 7-12 of Kaname, "As shown in FIG. 5, after lining is processed, the roller shaft is cut to produce lots of short rollers." In addition, as described at page 3, lower-left column, lines 8-10, as to the production of the rollers having a particularly narrow width, tubes are first manufactured and the tubes are then cut into ring shapes. Such rings are externally fit with the roller of a narrow width and fixed with adhesive or the like, thereby producing a roller with a narrow width and a lining with a given width." Accordingly, Kaname

discloses that a long tube is cut to produce rollers with given widths. Therefore, Kaname does not disclose or suggest the “linearly” moveable resin flow preventing dam of claim 1 to control the width of the applied resin. The plates 19 of Kaname are, in essence, no different than the fixed side walls of bucket 111 of Watanabe providing a fixed width to the applied coating.

Moreover, Kaname like Watanabe also does not disclose the claimed step of supplying the liquid first to a resin receiving plate and then applying it from the plate to the workpiece. Rather in Kaname, like in Watanabe, the liquid is applied first to the workpiece and then to plate body 18 as clearly shown in FIG. 5(a) of Kaname.

The Examiner notes on page 4, lines 4-7 of the Office Action that Kaname discloses “a plate like body of scoop device abutting against roller shaft” and, therefore, that it would be obvious to include “a roller shaft (preventive moveable dam)” in Watanabe, “because Bode et al (sic Kaname?) teach the use of the roller shaft aid in making the process of lining easier.

However, Applicants do not understand what the Examiner means by a “scoop device” or a “roller shaft aid.” The only thing it appears are meant by this are the side plates 19 shown in FIGS. 2 and 3 of Kaname. However, as explained above, these are fixed and are not the same as the claimed linearly moveable resin flow preventive dam. If the Examiner continues to rely on Kaname, it would be appreciated if she included reference numerals with her descriptions of the reference.

In any event, it is not seen how claim 1 or claims 5 and 29 dependent therefrom can be considered obvious over Watanabe in view of Kaname because as required by M.P.E.P. §2143.03, “all words in a claim must be considered in judging the patentability of that claim against the prior art,” and as noted in M.P.E.P. §2143.02, to support a

conclusion that a claim would have been obvious, "all the claimed elements" must have been known in the prior art. As discussed above, many of the claimed elements have not been shown to exist in either Watanabe or Kaname. Consequently, these claims cannot be considered to be prima facie obvious over this combination of references. Their withdrawal as a ground of rejection of the claims is therefore requested.

Regarding claim 3, none of paragraphs [0017] - [0018], [0020] or [0035] - [0037] of Bode teach or suggest "shaping the surface of the photosensitive resin cured layer" as recited in this claim. Moreover, the claim depends from claim 1, so it is obvious over the cited combination of references for the same reasons expressed above with respect to claim 1. It is believed claims 4 and 27 are also not obvious over the combination of references cited against these claims for the same reason.

Finally, with respect to the rejection of claim 1 and claims 3-12, 13-15 and 28-31 over Ogata and Kaname, as discussed in the Reply filed February 11, 2009, and as acknowledged by the Examiner on page 7, lines 12-13 of the Office Action, Ogata, like Watanabe, does not disclose the claimed linearly moveable resin flow preventive dam at at least one end of the resin receiving plate. In fact, it does not even teach a resin receiving plate. The liquid may be applied linearly to the rotating workpiece, but it is applied directly to the outer surface of the cylinder from the liquid photosensitive resin feed mechanism 120. This reference also belongs to the same assignee as the present application, so the Applicants are fully aware of the teachings of this reference.

In contrast, in the present invention, the liquid-state photosensitive resin 10 is first supplied to the resin receiving plate 151 having a resin flow preventing linearly moveable dam 153 and is then applied to the workpiece 70. This method has the advantage of minimizing the production of air bubbles before the liquid-state

photosensitive resin 10 is applied to the workpiece 70 and of being able to vary the width of the applied resin as discussed above with respect to Watanabe.

Nor does Kaname disclose these features missing in Ogata as discussed above also in relation to Watanabe.

Accordingly, in view of M.P.E.P. §2143.02 and .03, neither claim 1 nor claims 3-15 and 28-31 dependent therefrom can be considered obvious over Ogata in view of Kaname. Its withdrawal as a ground rejection of the claims is therefore also requested.

It is believed claims 1, 3-15 and 27-31 are in condition for allowance.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.

Respectfully submitted,

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Attachment: Exhibit A

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